

REMARKS

Claims 1-17 are all the claims pending in the application. Claim 1 has been amended to distinguish the invention recited therein more clearly. The remaining changes in the claims are editorial in nature or correct inadvertent errors.

Entry of the above amendment is respectfully requested.

**Preliminary Matters**

(1) On the Office Action Summary, the Examiner has neither acknowledged Applicant's claim for priority nor indicated that the certified copies of the priority documents have been received. Since priority was claimed in the application transmittal letter filed April 2, 2001, and since certified copies of the priority documents were filed October 1, 2001, Applicant respectfully requests that in the next communication from the PTO the Examiner acknowledge Applicant's claim for priority and indicate that the certified copies of the priority documents have been received.

(2) On the PTO/SB/08 A & B (modified) form attached to the Office Action, Applicant notes that the Examiner has lined out the citation to USAN 09/497,515. Since a copy of USAN 09/497,515 was filed with the PTO/SB/08 A & B (modified) form, Applicant respectfully requests that the Examiner consider USAN 09/497,515, and indicate in the next communication from the PTO that it has been considered.

**Anticipation Rejection over Paganin**

On page 2 of the Office Action, claims 1-3, 5, 6, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Paganin et al, Journal of Applied Electrochemistry (1996). (Paganin).

**The Examiner's Position**

The Examiner's position with respect to claim 1 is that the claim is directed to an electrode for fuel including a catalyst layer and a gas diffusion layer, and that the gas diffusion layer includes a porous polymer containing electro-conductive filler. The Examiner indicates that the same is disclosed in the first column of page 297, and that platinum is construed as the conductor.

**Applicant's Response**

In response, Applicant submits initially that the Examiner's position is derived from a misunderstanding of the meaning on the word "porous" in the claim 1. That is to say, the Examiner considers the word "porous" to refer to the existence of a pore as a void space in the gas diffusion layer. Such a pore exists in the any gas diffusion layer, including the present case.

However, the "porous polymer" recitation should be read as "porous polymer having pores in its material". Namely, numerous pores are formed in the polymer material in this invention. This is supported by the fact that the electrode of the present invention is prepared by using a phase separation process as described from line 7 of page 20 to line 2 of page 21 of the

present specification. The numerous pores formed according to the process, e.g., by using a solvent extraction method, will be produced in the polymer material itself with little shrinkage of the polymer even after the drying process, because pore formation is conducted in the polymer solution by replacing the solvent dissolved polymer with water, and only water in the pores of the polymer is evaporated by the drying process.

On the contrary, in the case of Paganin's process for making the gas diffusion layer, the mixture of carbon powder and PTFE suspension comprising both PTFE powder and water in the carbon cloth is only dried. The pores will be produced as a void space between the PTFE and the carbon in the structure of solid mixtures by evaporating the water during the drying process.

Thus, Applicant submits that the present invention is not anticipated by (or obvious over) Paganin. Accordingly, withdrawal of this rejection is respectfully requested.

#### **Anticipation Rejection over Reddy**

On page 3 of the Office Action, in paragraph 7, claims 1-8 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,085,743 Reddy et al (Reddy).

#### **The Examiner's Position**

The Examiner's position as to claims 1-3 and 5 is that the reference discloses an electrode comprising a catalyst layer (see e.g. column 3, line 44 *et seq.*) comprising particle (preferably gold) and a gas diffusion layer comprising a porous polymer containing an electro-conductive filler, such as carbon particles (preferably carbon fibers).

**Applicant's Response**

In response, Applicant submits that in the case of Reddy, the electrode has a non-porous hydrophobic polymer layer, but not a porous hydrophobic polymer layer as in the present invention (see column 8, lines 57-61).

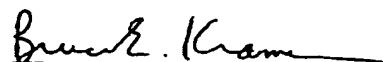
Therefore, Applicant submits that the present invention is not anticipated by (or obvious over) Reddy. Accordingly, withdrawal of this rejection is respectfully requested.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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